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No. 1869

OILS, PAINTS, AND MATERIALS
FOR THE
CLEANING AND PRESERVATION OF SEACOAST GUNS

GUN CARRIAGES
SIGHTS
AND POSITION-FINDING INSTRUMENTS

TWO PLATES

FEBRUARY 1, 1898
REVISED APRIL 28, 1908
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ORDNANCE DEPARTMENT U.S.A.

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WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ORDNANCE,
Washington, January 6, 1917.

This manual is published for the information and government of the Regular Army and National Guard of the United States.

By order of the Secretary of War:

WILLIAM CROZIER,
Brigadier General, Chief of Ordnance.

363172

PAINTS.

[The important changes in this pamphlet are shown in bold-face type.]

GRAPHITE PAINTS,[1] or equal, are issued for seacoast guns, mortars, and their carriages. Paints for guns and mortars are of drab color and those for carriages of an olive-green color.

These paints are issued in 2-gallon tin cans, the small packages being desirable in that they keep the paint in better condition than larger packages in which the paint is exposed to the air after having been once opened.

The annual allowances of these paints are given in the tables at the back of this pamphlet, the quantities being based upon three complete coats of paint annually for both gun and carriage. The actual needs of the service will depend somewhat upon the climate and local conditions—the allowances, however, are sufficient in any case. Three coats of paint should be applied to guns and carriages during the first year after mounting; after that two coats per year should suffice with but few exceptions.

As soon as a carriage has been mounted and the gun assembled thereon a priming coat of graphite paint No. 38, or equal, should be applied to any parts of the carriage from which the paint has been accidentally removed in mounting. The same should be done in the case of the gun, except that the No. 57 graphite paint, or equal, should be used. After the priming coat has thoroughly dried, or after not less than three days, the gun and carriage should each be given a complete coat of paint, using the proper colored paints for each.

All parts of guns and gun carriages will be painted, except the wearing and bearing parts. These are considered to include the following:

All parts of breechblock.
Trays, both steel and bronze.
Square ends of shafts.
Teeth of all gears, crosshead racks, crosshead pawls, and clutches.
Elevating rack guides.
Rollers and surfaces on which they travel.
Piston rods.
Crosshead guides.
Handles of cranks, handwheels, and clutches.
Azimuth and elevation scales and pointers.
Followers of stuffing boxes.
Lanyard safety pawls.
Bearings for sights.
Grooves of retraction rope pulleys and drums.
Grease cups and oil-hole covers.

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[1] For allowances see tables at back of this pamphlet.

Bronze shoulder guards as on 6-inch barbette carriages will be painted. The ground of name and direction plates will be painted red, but the raised portions of the letters, figures, arrows, and rims are to be kept bright and free from paint. Name plates should never be removed from carriages.

The graphite paints, or equal, are issued ready for use, but require to be thoroughly stirred before using. If for any reason the paint should be found too thick, it should be thinned with not to exceed 2 per cent by volume of turpentine, which oil is issued for this purpose. A dryer is also issued to accelerate the drying of paint should that process be too slow. When used, dryer should be added in amount not to exceed 1 per cent of the paint by volume.

Care should be exercised to insure that the paint is of proper consistency before it is applied. If too thick or "fat" when used, the paint will not dry properly but will dry only on the surface, thus forming a thin film under which the paint will still be "green" or "wet." This result will also occur in case the paint is not well brushed on in a thin coat. A coat of these paints properly applied will, under favorable conditions of sunshine and moisture, be thoroughly dry after four days.

Before applying this paint to any surface the latter should first be made thoroughly clean, dry, and smooth.

Should it be necessary at any time in order to obtain such a surface to remove old paint, the following method should be followed: Dissolve 1 pound of concentrated lye, powdered form, in 6 pints of hot water and add enough lime to the solution to give the mixture about the consistency of paint. Having this solution freshly mixed, apply it with a brush or wad of waste tied to the end of a stick to the paint which it is desired to remove. When the application begins to dry, remove it together with the softened paint beneath with a metal scraper. Should the old paint be insufficiently softened by one application of the lye solution, a second coat should be applied. The surfaces thus treated should then be washed with a rag and water, and again washed with a solution made up of one-half pound of washing or sal soda to 8 quarts of water. After this final washing, the surface should be left to stand in the sun *until thoroughly dry before any paint is applied.*

Mortar carriages should be dismounted once each two years for cleaning and painting the recoil springs. To remove the old paint from the recoil springs when so dismounted, a strong solution of lye and hot water should be made up in a wooden trough or other vessel deep enough to allow the complete submersion of the springs. The springs should be submerged in this lye solution for at least five minutes, after which time they should be removed and the old paint removed by a stream of water from a hose. The springs should then be wiped clean and dry and any rust removed. After this treatment and a subsequent drying in the sun, two coats of paint should be applied. The springs should not be reassembled to the carriage until the paint is thoroughly dry. (See Circulars Nos. 43 and 45, W. D., 1906, and No. 12, 1908.)

Paints should be tightly covered to prevent evaporation and thickening. In case a paint has so deteriorated, it should be strained through a sieve or cloth to remove skins, etc., before using. Such paints will also usually require the addition of turpentine to bring them back to the proper consistency.

Graphite paint No. 57 has been extensively issued for use on guns, and similarly graphite paint No. 38 has been used for carriages. Other paints equally good, however, have been developed and may be issued in lieu of those mentioned above. The paints thus far found suitable and authorized for issue are:

- Detroit Paint Co.:
  - Superior graphite paint No. 57 (drab).
  - Superior graphite paint No. 38 (olive green).
- U. S. Graphite Co.:
  - Special drab.
  - Special green.
- National Paint Works:
  - No. 32 gray graphite.
- U. S. Gutta Percha Co.:
  - Special olive green.
- Raritan Paint Co.:
  - No. 2 dark green.
- **Voltax Co.:**
  - **Voltax black for United States Navy guns.**
- **Goheen Manufacturing Co.:**
  - **"Old Honesty" black carbonizing coating.**
- **Hutchison Scott Co.:**
  - **Olax drab.**

ZINC WHITE PAINT[1] is issued for use in painting the inside of lamp brackets, lamp covers, etc., of telescopic sights and position-finding instruments. The zinc white should be applied *in three thin coats* on such surfaces and allowed to thoroughly dry before the application of the finishing coat of white enamel paint. Before applying this paint it should be thinned with turpentine to about the consistency of molasses. The surfaces to be painted should be first thoroughly cleaned and dried. A soft camel's-hair brush should be used in applying this paint.

WHITE ENAMEL PAINT.[1]—This enamel is issued for the same purpose as the zinc white paint, except that it is for application as a finishing coat. Care should be taken in mixing this enamel to *insure its being thin enough as enamel paints will run when applied in a heavy coat.* Add turpentine to thin this enamel if found too thick, and apply smoothly *in a thin coat* with a camel's-hair brush.

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[1] For allowances see tables at back of this pamphlet.

BRONZE GREEN PAINT [1] is for use in painting the nonfinished parts of telescopic sights, position finders, and the pedestals of the latter. Before applying this paint, the surfaces to be painted should be thoroughly sandpapered with No. 1 sandpaper and cleaned. The bronze green paint should be prepared for use by adding one sixty-fourth of a gallon of turpentine to each one-half pound can of the paint, and the paint thoroughly mixed with a wooden paddle. To apply the paints, use the camel's-hair brushes issued for this purpose. The large 2-inch flat brush will be found suited for painting the pedestals and large surfaces, and the smaller camel's-hair brushes for the smaller surfaces. Care should be taken not to touch any bearing or bright surfaces with the sandpaper. The paint should be neatly applied only to such surfaces as were originally painted. Four days should be allowed for the thorough drying of each coat of paint. This paint is issued in one-half pound tin cans, which should not be opened until the paint is to be used. Cans once opened should be kept tightly covered to prevent evaporation.

ENAMEL FINISH [1] is issued in one-half-pound tin cans for use as a final coat over the bronze green paint. It should be applied with the camel's-hair brushes mentioned above after they have been thoroughly cleaned with turpentine. Cans of enamel finish should not be opened until their contents are needed and should be kept tightly covered thereafter to prevent evaporation. This enamel finish should be applied *over the paint only* and not on bright or bearing surfaces.

VARNISH [1] is issued for the varnishing of armament chests. It should be applied with one of the paint brushes issued for other paints, first cleaning it *thoroughly.* The surface of the wood should be thoroughly smoothed down before the application of the varnish and any holes or cracks puttied.

QUICK-DRYING BLACK AND WHITE PAINTS [1] are issued for stenciling purposes on the carriages or emplacements.

TRANSPARENT LACQUER [1].—The sand-blasted and polished brass surfaces of range-finding and fire-control instruments are coated with a transparent lacquer to prevent tarnishing. If in the service this coating is removed accidentally or through long use, fresh lacquer should be applied with a soft camel's-hair brush.

Lithite cold-water paint,[1] or equal, is issued for use on plotting boards 360° type, model of 1911.

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[1] For allowances see tables at back of this pamphlet.

OILS FOR PAINTS.

TURPENTINE[1] is issued in 1-gallon tin cans for the purpose of thinning paint found to be too thick or "fat" for application in a thin, even coat. It also has a drying effect upon paint with which it is mixed. Turpentine should not be added to freshly opened paint to a greater extent than 2 per cent by volume. Care should be exercised to keep such turpentine as remains in a can that has been opened tightly covered in order to prevent its waste by evaporation. It will also be found useful in cleaning paint brushes. Linseed oil will no longer be issued for the purpose of thinning paints.

DRYER[1] is issued in one-half-gallon cans for use with paint that dries too slowly. The graphite paints should not be expected to be thoroughly dried under four days after application. If difficulty is found in the drying of paint, the dryer should be added in an amount not to exceed 1 per cent of the paint by volume. Dryer should be kept tightly covered to prevent waste by evaporation.

LUBRICATING OILS.

Engine oil No. 1[1] is issued for general lubricating purposes, for bearings, sliding surfaces, breechblocks, breech boxes, and in general for all bearings not provided with compression grease cups. It is a mineral oil and is required to be free from acid, alkali, tar, and resinous matter. It has a flash point of not less than 200° C. and should withstand a cold test below 0° C. This oil should also be used as a preserving agent for retraction ropes of disappearing carriages.

Gear-case oil;[1] specifications 600–W Standard Oil Co., or equal, may be issued in lieu of engine oil No. 1 for use on 12-inch mortar carriages.

NO. 4½ LUBRICANT.[1]—This is a heavy mineral oil which is issued for use on the heavy bearings of carriages, such as the gun trunnions, gun lever axles, and crosshead pins. It is to be used in connection with the compression grease cups provided on the bearings mentioned. This oil is required not to contain more than 1.5 per cent free acid calculated to oleic acid, nor more than 5 per cent of moisture. It is also subjected to a heat test under which its consistency at 70° F. is required to be not less than that of tallow. It is issued in tin pails of about 20 pounds capacity.

FLAKE GRAPHITE,[1] Dixon's Standard No. 1, or equal, is issued for use with the *No. 4½ lubricant.* The purpose of this admixture is to form a more durable lubricant for very heavy bearings, and one which will not permit so much friction and consequent cutting of the bearings in cases where the compression grease cups have inadvertently been allowed to become empty, as would the *No. 4½ lubricant* if used alone. The graphite should be mixed with the *No. 4½ lubricant* by kneading and *without heating* the latter, as heating destroys its viscosity. The proportions to be used are 95 per cent of No. 4½ lubricant to 5 per cent of graphite *by volume.*

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[1] For allowances see tables at back of this pamphlet.

Flake graphite for lubricating purposes must be smooth and unctious to the touch, and must contain not less than 87.5 per cent of graphitic carbon.

Clock oil[1] is issued in bottles containing 1 fluid ounce for lubricating the delicate bearings of telescopic sights, position finders, and other range-finding apparatus. This oil should be applied by dropping from the end of the dropper attached to the cork.

NEUTRAL OIL FOR HYDRAULIC BRAKES.

Hydroline[1] is a chemically neutral mineral oil issued for use in the hydraulic cylinders of the brake systems of seacoast carriages. It is required to be entirely free from signs of acid and alkali at all ordinary temperatures, to show a specific gravity of between 0.835 and 0.87 at 60° F., to be free from ash and saponifiable oil, and to show no signs of decomposition up to 200° F. It is also required to pass a specified viscosity test and a cold test of 0° F.

This oil is issued *exclusively* for use in hydraulic cylinders of the brake systems of all seacoast gun carriages. Great care is taken to obtain a superior and uniform grade of this oil in order to insure uniform recoil action. It is therefore evident that similar care should also be exercised by the service to keep this oil separate from all other oils, and to see that storage conditions are such as prevent any adulteration from old hydroline, moisture, sediment, or other oils. *No other kind of oil should ever be used in hydraulic cylinders.*

Hydroline is issued in 5-gallon tin cans provided with a screw cap.

When hydroline is drawn off from hydraulic cylinders it should be strained through the sieve provided in order to remove the coarser sediment, and should then be allowed to stand quiescent in a large covered vessel for not less than 24 hours before being again used. In drawing off old hydroline the supply should always be removed from the top of the storage receptacle in order to avoid including any sediment which may have settled. Mere discoloration of old hydroline is not an indication of unserviceability.

Hydraulic cylinders should never be left empty, as when in that condition they will rust. For this reason any leakage from these cylinders should be promptly replaced.

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[1] For allowances see tables at back of this pamphlet.

SLUSHING OILS.

Light slushing oil[1] is provided for the purpose of protecting bright metallic surfaces from rust when the carriage and gun are "in ordinary" or out of commission. This oil is essentially a mineral oil but may contain resin. It is required to be free from mineral and vegetable oils, from mineral acid, and from all substances which would corrode metal. It is also required to be capable of being applied with a brush at all ordinary temperatures and to be free from dirt and sediment. It is issued in tin pails of about 2-gallon capacity.

This oil should be applied *in a thin coat* to the bright surfaces to be protected, using sash tool No. 6. A *thin* coat is all that is needed to give good protection. In very cold weather when the oil is somewhat stiff, it should be applied by stippling with the brush named, i. e., by holding the brush perpendicular to the surface to be coated and tapping the same with the point of the brush. Before applying light slushing oil, care should be taken to see that the surface to be coated is free from rust, water, kerosene, and lubricating oil, as the first three substances named would cause rusting underneath the slushing oil and the latter would cause the slushing oil to run off in hot weather.

To apply this oil to the bores of rifles and mortars, use should be made of the **slush** brush provided **for this purpose.** In cold weather this oil should first be heated. For rifles, this brush staff is fitted with a socket by means of which it may be connected with the stave of the special bore sponge; for mortars, this brush is provided with a special handle. Before applying slushing oil to the bore of guns, after firing, the bores should first be washed out with clean water, drained, and made perfectly dry.

Light slushing oil may be used on all bright surfaces of guns and mortars *except the breechblock and breech box*, which should be oiled with **engine oil No. 1. It may also be used on retraction ropes of disappearing carriages as a preserving agent.** When a gun is out of commission, however, light slushing oil may be applied to the breechblock and breech box *provided this coating is removed before the gun is fired.* (See Circular No. 48, W. D., Sept. 15, 1905.)

This oil may also be used as a lubricant on certain heavy bearing surfaces such as crosshead guides and recoil roller paths, but when used for this purpose it should be freshly applied before the carriage is tripped, as otherwise the slushing oil is apt to be gummy and sticky to such an extent as to render the counter recoiling motion of the carriage sluggish. **Engine oil No. 1** may also be used for such surfaces as described, but where so used it affords but little protection against rust, whereas the slushing oil serves the double purpose of lubricating and protecting from the weather.

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[1] For allowances see tables at back of this pamphlet.

If this oil is applied less than 30 hours before being subjected to a heavy rain, the surfaces so coated should be reexamined thereafter to make sure that the moisture has not penetrated the coating.

To remove this oil, the greater part of the coating should be taken off by means of a scraper and the balance then removed by using a rag or cotton waste moistened with kerosene. A hot solution of water and lye will also loosen the oil and render it easy to remove.

As a rule, light slushing oil may be sufficiently removed from the bore to permit of firing by means of a scraper alone, but when the bore is to be thoroughly cleaned preparatory to star gauging or other critical examination, use must be made of the bore sponge covered with burlap moistened with kerosene or a solution of lye and water. After nearly all of the oil has been removed in this manner, a clean covering of burlap should be put on the head of the bore sponge, and this covering moistened with kerosene and sprinkled with lavaline for use in the final cleaning.

CEDAROLEUM is a slushing compound that has been found to be the equal of light slushing oil for protecting metallic surfaces, and especially for the protection of the bores of seacoast guns and mortars. Owing to the fact that it contains *fine clay* as a stiffener *it is not suitable for use as a lubricant and should not be so used.* One-third of the allowance of light slushing oil may be drawn in cedaroleum if so desired.

White lead compound will be issued for use in protecting metallic surfaces of parts of guns, mortars, and carriages when out of commission, or when such parts are to be shipped by rail or water. The material is not intended for a lubricant and its use as such is not authorized. The compound has been tested and has been found to give good results under adverse conditions of temperature and moisture, and it can be removed readily by the use of kerosene. When applied, the compound should be allowed to harden for from 24 to 30 hours before handling or exposure to rain.

White lead compound may be issued in lieu of one-third of the allowance of light slushing oil, in the proportion of 1 gallon of the compound to 10 pounds of slushing oil.

The compound is composed of equal parts of boiled linseed oil and lard oil, with sufficient white lead added to give a consistency a little heavier than that of paint. Fifty pounds of lead added to 1 gallon of each of the two oils will make a satisfactory mixture. Differences in temperature may have some effect upon the amount of white lead required. In any case, the amount added should make the compound so thick that it will

not run when applied to a smooth vertical surface. Increasing the amount of linseed oil increases the hardness of the outer skin, and also the difficulty of removal. The lard oil maintains a soft film next to the surface of the metal, giving excellent protection and facilitating removal of the compound.

KEROSENE.

Kerosene[1] is issued in 5-gallon tin cans for cleaning purposes only. It should be used, in connection with the plumber's force pump supplied to each post, for flushing out and cleaning the interiors of hydraulic recoil cylinders. It should also be used on the burlap covering of the special bore sponge when removing light slushing oil from the bores of rifles and mortars and also when scouring the bores with lavaline. Kerosene will also be found useful in cutting and loosening any oil which has become dry or gummy. In order to husband the allowance of kerosene as much as possible, use should first be made of a scraper in removing light slushing oil; the remainder may then be removed with a rag or wad of cotton waste moistened with kerosene.

ABRASIVES.

Sandpaper No. 1[1] is provided for use in removing old paint from telescopic sights and position finders. When so used, *care should be taken not to touch any bright or bearing surface with this paper.* The use of sandpaper on bright parts of guns, mortars, and their carriages *is forbidden.*

Emery cloth no. 00[1] is issued for use in cleaning bright metallic parts of guns and mortars and their carriages. *No coarser abrasive than this should be used on breechblocks or breech boxes.* In removing rust it will be found that if the rusted part be first moistened with kerosene for an hour or so that the subsequent cleaning of the part with emery cloth will be facilitated.

Emery cloth no. 1[1] is for use in cleaning bright metallic surfaces. No coarser abrasive than this should be used on the piston rods of any carriage. For other remarks on the use of this emery cloth see preceding paragraph.

Lavaline[1] is an abrasive scouring material in powdered form. It is provided for general scouring purposes on bright surfaces of guns and carriages where a coarser material is not needed. It will be found especially useful in cleaning the bores of guns and mortars preparatory to star gauging or other critical examination. In using this substance it should be applied on a rag, burlap, or cotton waste moistened with kerosene and rubbed vigorously upon the surface to be cleaned or polished.

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[1] For allowances see tables at back of this pamphlet.

PUTZ POMADE.[1]—This is the mildest of the abrasives issued and is intended for use in polishing brasses and other polished surfaces. It should be applied on soft rag or old chamois skin, rubbing vigorously.

MISCELLANEOUS CLEANING MATERIALS.

SAL SODA [1] is issued for use as one of the ingredients of the solution mentioned on page 6 for use in preparing metallic surfaces for painting.

LIME, QUICK,[1] is provided for use as an ingredient of the paint-removing solution described on page 6.

LYE, POWDERED,[1] is issued for use as a part of the paint-removing solution described on page 6. It is also used with hot water for softening light slushing oil prior to its removal.

Cleaning paper [1] is provided for use in cleaning lenses of optical instruments.

BURLAP [1] is issued for use in cleaning bores of rifles and mortars in connection with the special bore sponge as described under the heading of light slushing oil. It may also be used for general cleaning purposes about the gun and carriage.

FLAX TWINE [1] is provided for use in sewing the burlap covers to the head of the special bore sponge as described under the heading of light slushing oil.

PACKING NEEDLES [1] are provided for use in connection with the flax twine. See preceding paragraph.

New era compound [1] is used for sponging out the bores of guns and mortars.

PUTTY [1] is issued for use in filling cracks, crevices, or blowholes previous to painting. It should be kept in a tightly covered tin can to prevent hardening. If it becomes stiff, the addition of paint and reworking will render it serviceable.

COTTON WASTE, WHITE.[1]—This is a good quality of waste, issued for use in cleaning position finders, telescopic sights, and azimuth instruments requiring a finer cleaning waste than a gun carriage.

COTTON WASTE, COLORED.[1]—This material is provided for general cleaning purposes. It may also be used as a calking material for cracks from which it is desired to exclude dust or sand.

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[1] For allowances see tables at back of this pamphlet.

PAINT POTS, ETC.

One-gallon paint pots[1] are issued for use with the drab and olive green paints for guns, mortars, and carriages.

Sieves.[1]—These are issued for straining paints and oils. After using with paint the meshes should be cleaned with turpentine in order to avoid the permanent closing of the meshes.

BRUSHES.

Paint brushes.[1]—The *4-inch wall brush* and the *brush No. 6/0* are for use in painting guns and mortars and their carriages with the graphite paints.

The *sash tool No. 6* is for use in applying light slushing oil.

Painter's duster No. 2[1] is for use in dusting surfaces which are about to be painted, and should be so used.

Camel's-hair brushes[1] are for use in painting telescopic sights and position finders *only*.

All paint brushes should be thoroughly cleaned out after using. For this purpose turpentine will be found efficient. After being cleaned all paint brushes, except those of camel's hair, should be kept with their bristles submerged in a can of fresh water. Camel's-hair brushes *after being thoroughly cleaned* with turpentine should be laid flat on a shelf or other horizontal surface in order that the hair of the brush may not be distorted.

Corn brooms[1] are supplied for use in connection with the cleaning and care of guns and mortars and their carriages. They may also be used in policing and cleaning magazines and other portions of seacoast batteries.

Whisk brooms.[1]—These are issued for brushing sand or snow from the small recesses on mortar carriages.

PERMANENT CLEANING AND PRESERVING EQUIPMENT.

Oil storage tanks, funnels, and measure.—The tanks are supplied in two sizes: The 60-gallon tank for the storage of cylinder oil (hydroline) and the 30-gallon size for the storage of kerosene. These tanks for use in keeping and sedimenting old oils after they have been strained. The allowances of these materials are indicated in the following table:

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[1] For allowances see tables at back of this pamphlet.

Material.	60-gallon tank for hydroline.	30-gallon tank for kerosene.
For each battery of 12-inch guns	1	1
For each pit of 4 mortars, 12-inch		[1]2
For each battery of 10-inch guns	1	1
For each battery of 8-inch guns		[1]2
For each battery of 6-inch guns		[1]2
For each battery of 14-inch guns	1	1
Equipment furnished with each tank and considered a part of complete tank:		
1-pint measure	1	1
1-quart measure	1	1
2-quart measure	1	1
1-quart funnel	1	1
Detachable pump	1	1

[1] 1 for kerosene and 1 for hydroline.

Plumber's force pump.—One of these pumps will be issued to each Coast Artillery post for use in flushing out the recoil cylinders.

Hose.—**With each force pump, 10 feet of 1-inch suction hose, 4 ply, with 1-inch female coupling, and 15 feet of three-eighths-inch discharge hose, 3 ply, with three-fourths-inch female coupling is issued. When this hose becomes worn out it will be replaced, but new couplings should not be supplied unless the old ones are unserviceable.**

The following tables of annual allowances *supersede allowances stated in Ordnance supply manuals and set forth all of the materials which will be regularly issued*, together with the amounts of each. These amounts have been determined after considering recommendations from all of the armament districts, and they are believed to be ample for the purpose of keeping the material in serviceable condition.

Articles not listed in the table will not be issued, but if such articles are desired a report should be rendered *stating all of the reasons why such an issue should be made.*

When guns, carriages, and fire-control equipment are used in target practice by organizations other than those regularly assigned therewith, there will be issued to such organization the following-named cleaning material in quantities not exceeding one-twelfth of the annual allowance for each unit of armament used:

Cotton waste.
Lye.
Burlap.
Emery cloth.
Kerosene oil.
Engine oil No. 1.
Light slushing oil.
Putz pomade.

The issue will be in addition to the regular allowances. (Circular No. 102, W. D., Dec. 21, 1908.)

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Lavaline	13
Lubricant, No. 4½	9
Lye, powdered	14
Measures, oil	15
Needles, packing	14
Oil, clock	10
Oil, light slushing	11
Oil, linseed	9
Oil, engine, No. 1	9
Paint, black, quick drying	8
Paint, bronze green	8
Paint, graphite, drab	5
Paint, graphite, olive green	5
Paint, lithite cold water	8
Paint, white enamel	7
Paint, white, quick drying	8
Paint, zinc white	7
Paint pots, gallon	15
Paint-removing preparation	6
Painting mortar-carriage springs	6
Paints authorized for issue	7
Pomade, Putz	14
Pump, detachable	16
Pump, plumber's force	16
Putty	14
Quicklime	14
Removing slushing oil from bores	12
Sandpaper	13
Sieves	15
Soda, sal	14
Tanks, oil storage	15
Tanks, oil storage, allowance of	15
Turpentine	9
Twine, flax	14
Varnish	8
Waste cotton, colored	14
Waste cotton, white	14
White-lead compound	12

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ORDNANCE,
Washington, January 6, 1917.

February 1, 1898.
Revised April 28, 1908.
Revised March 20, 1909.
Revised January 6, 1917.
062.1-2050.

FORM NO. 1869.
Ed. Jan. 6-17—2,000.

TABLE I.

		US MATERIALS									MISCELLANEOUS PAINTING SUPPLIES												
		SAL SODA	LIME	LYE	COTTON WASTE WHITE	CORN BROOMS	WHISK BROOMS	CLEANING PAPER	CASTILE SOAP	NEW ERA DRAWING COMPOUND.	4 INCH WALL PAINT BRUSH	PAINT BRUSH NO 6/0	PAINT BRUSH FLAT 1/2" CAMEL'S HAIR	PAINT BRUSH FLAT 1" CAMEL'S HAIR	PAINT BRUSH 2" FLAT CAMEL'S HAIR	DUSTERS BRUSH PAINTER'S NO 2	SLUSHING BRUSH SASH TOOL NO.6	PAINT POT 1 GALLON	SIEVE FOR OIL AND PAINTS	PUTTY KNIVES	WIRE BRUSHES	EQUIVALENT MONEY VALUE OF ALLOWANCES	FOR EACH CARRIAGE OR INSTRUMENT
1	UNIT	LBS	BBLS	LBS	LBS	NO	NO	REAM	LBS	GALS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	$	CTS.
2	PRICE PE	.01	1.35	.05	.10	.27	.14	.73	.10	.80	.36	.66	.08	.10	.18	.30	.10	.13	.23	.25	50		
3																							
4	2.24 INCH	5	1/4P	2		2					1P	1P				1P	2	1P	1			13	28
5																							
6																							
7																							
8	3 INCH RIF	5	1/4P	3		2					1P	1P				1P	2	1P	1			15	61
9	3 INCH RIF	5	1/4P	3		2					1P	1P				1P	2	1P	1			15	61
10	3 INCH RIF	5	1/4P	3		2					1P	1P				1P	2	1P	1			15	73
11	⊕ 3 INCH SAL	5							5			1					1					3	98
12																							
13																							
14																							
15	4 INCH RIF	5	1/4P	5		3					1P	1P				1P	2	1P	1			18	87
16																							
17																							
18																							
19	4.72 INCH	5	1/4P	6		3					1P	1P				1P	2	1P	1			24	43
20																							
21																							
22																							
23	4.7 INCH	5	1/4P	6		3					1	1				1	2	1	1			27	94
24																							
25																							
26																							
27	5 INCH RIF	5	1/4P	6		3				2	2	3				2	3	2	1			26	81
28	5 INCH R	5	1/4P	6		3				2	2	3				2	3	2	1			26	83
29																							
30																							
31																							
32	6 INCH R	5	1/4P	6		3				2	2	3				2	3	2	1			29	79
33	6 INCH RI	5	1/4P	6		3				2	2	3				2	3	2	1			30	06
34																							
35																							
36																							
37	6 INCH R	10	1/2P	9		4				2	2	3				2	3	2	1			38	11
38	6 INCH R	10	1/2P	9		4				2	2	3				2	3	2	1			39	79
39	6 INCH RI	10	1/2P	9		4				2	2	3				2	3	2	1			39	79
40	6 INCH RI	10	1/2P	9		4				2	2	3				2	3	2	1			39	79
41																							
42																							
43																							
44	8 INCH R	10	1/2P	9		4				2	2	3				2	3	2	1			40	75
45																							
46																							
47																							
48	8 INCH R	10	1/2P	12		4				2	2	3				2	3	2	1			53	20
49	8 INCH RI	10	1/2P	12		4				2	2	3				2	3	2	1			53	20
50	8 INCH RI	10	1/2P	12		4				2	2	3				2	3	2	1			33	20
51																							
52																							
53																							
54	10 INCH R	15	3/4P	12		3				3	2	3				2	3	2	1			47	92
55																							
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60					WITH 27-5-2, SUPERSEDES 27-5-1.																		
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DR'G. PERTAINS TO		REVISIONS
CLASS	DIV.	1 SEPT. 29, 1916.
		2 NOV. 7, 1916.

TABLE OF ANNUAL ALLOWANCES FOR CLEANING AND PRESERVING MATERIAL FOR SEACOAST ARMAMENT, AND FOR RANGE FINDER AND FIRE CONTROL INSTRUMENTS

MAR. 30, 1916.

SUBMITTED:
CAPT. ORDNANCE DEPARTMENT U.S.A.

E.F.B. J.E.P. W.E.Y.

EXAMINED:
ORDNANCE DEPARTMENT U.S.A.

APPROVED BY ORDER OF THE CHIEF OF ORDNANCE
MAJOR, ORDNANCE DEPARTMENT, U.S.A.

CLASS 27 | DIVISION 5 | DRAWING 1 | FILE

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1	UNIT	LBS	BBLS	LBS	LBS	NO	NO	REAM	LBS	GALS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	$	CTS.
2	PRICE PE	.01	1.35	.05	.10	.27	.14	.73	.10	.80	.36	.66	.08	.10	.18	.30	.10	.13	.23	.25	.50		
3																							
4	224 INCH	5	1/4p	2		2					1p	1p				1p	2	1p	1			13	28
5																							
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8	3INCH RIF	5	1/4p	3		2					1p	1p				1p	2	1p	1			15	61
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Gaylord Bros.
Makers
Syracuse, N. Y.
PAT. JAN. 21, 1908

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